

IN THE CLAIMS:

LISTING OF ALL CLAIMS:

Claims 1-10. (Canceled)

11. (Currently Amended) A semiconductor device as claimed in claim 31, wherein said substrate for basic structure contains
- (1) a material of formula LnABO_4 or $\text{LnAO}_3(\text{BO})_n$,
wherein,
Ln is a rare earth element,
A is selected from the group consisting of Fe, Ga and Al,
B is selected from the group consisting of Mn, Co, Fe, Zn, Cu, Mg, and Cd, and
wherein said semiconductor layer is formed ~~form~~ from a group II metal oxide.
12. (Previously Presented) The semiconductor device as claimed in Claim 11,
wherein Ln is selected from the group consisting of Sc, In, Lu, Yb, Tm, Ho, Er and Y.
13. (Previously Presented) The semiconductor device as claimed in Claim 11,
wherein the group II metal oxide is selected from the group consisting of zinc oxide (ZnO), zinc magnesium oxide ($\text{Mg}_x\text{Zn}_{1-x}\text{O}$), zinc cadmium oxide ($\text{Cd}_x\text{Zn}_{1-x}\text{O}$) and cadmium oxide (CdO).
14. (Previously Presented) The semiconductor device according to claim 11,
wherein said substrate is a material selected from the group consisting of ScAlMgO_4 , ScAlZnO_4 , ScAlCoO_4 , ScAlMnO_4 , ScGaZnO_4 , ScGaMgO_4 , $\text{ScAlZn}_3\text{O}_6$, $\text{ScAlZn}_4\text{O}_7$, $\text{ScAlZn}_7\text{O}_{10}$, $\text{ScGaZn}_3\text{O}_6$, $\text{ScGaZn}_5\text{O}_8$, $\text{ScGaZn}_7\text{O}_{10}$, $\text{ScFeZn}_2\text{O}_5$, $\text{ScFeZn}_3\text{O}_6$, and $\text{ScFeZn}_6\text{O}_9$,
and,
ZnO is used as a material for said semiconductor layer.
15. (Previously Presented) The semiconductor device according to claim 11,
wherein said substrate is a material selected from the group consisting of ScAlO_3 , $(\text{ZnO})_n$, $\text{ScFeO}_3(\text{ZnO})_n$, $\text{ScGaO}_3(\text{ZnO})_n$, $\text{InFeO}_3(\text{ZnO})_n$, $\text{InGaO}_3(\text{ZnO})_n$, $\text{InAlO}_3(\text{ZnO})_n$, $\text{YbAlO}_3(\text{ZnO})_n$, and $\text{LuAlO}_3(\text{ZnO})_n$,
and,
ZnO is used as a material for said semiconductor layer.
16. (Currently Amended) A semiconductor device as claimed in claim 31, wherein said substrate for basic structure contains,

(2) a material selected from the group consisting of ScAlBeO_4 , ScBMgO_4 , ScBBeO_4 and $\text{LnAO}_3(\text{MgO})_n$,

wherein A is selected from the group consisting of Fe, Ga and Al,

~~B is Boron;~~ and

a said semiconductor layer is formed from a material selected from the group consisting of GaN, AlN, InGaN and AlInN.

17. (Previously Presented) The semiconductor device according to claim 11, further comprising a buffer layer, between said substrate and said semiconductor layer,

wherein said buffer layer contains a material having a composition or a structure identical to that of said semiconductor layer as a base and slightly doped or undoped with impurities.

18. (Currently Amended) The semiconductor device according claim 17, wherein ZnO is used for said semiconductor layer, and said buffer layer is an insulating material slightly doped with an element capable of taking valence of 1 value or a group V element, an insulating ~~semiconductor material~~ containing ~~undoped~~ undoped and pure insulating ZnO or a combination thereof.

19. (Previously Presented) The semiconductor device according to claim 18, wherein said buffer layer is ZnO.

20. (Previously Presented) The semiconductor device according to Claim 11, further comprising an insulating layer formed by using a material identical to that for said substrate for a basic structure.

21. (Currently Amended) The semiconductor device according to claim 11, further comprising a light emission layer formed on said semiconductor layer by using a material having a composition or a structure identical to that of said semiconductor layer as a base, and

a second semiconductor layer which is formed on said light emission layer by using a material having a composition or a structure identical to that of said semiconductor layer as a base, and which has carriers that have ~~[[has]]~~ a different ~~channel~~ conductive sign from ~~[[that]]~~ carriers of said semiconductor layer.

22. (Currently Amended) The semiconductor device according to claim 21,

wherein said light emission layer is selected from the group consisting of a multilayer structure of ~~(Mg, Zn)O~~ (Mg, Zn)O and ZnO, a multilayer structure of (Zn, Cd)O and ZnO, and a multilayer structure of (Mg, Zn)O and (Zn, Cd)O.

23. (Currently Amended) The semiconductor device according to claim 11,
wherein ~~said semiconductor layer is an insulating semiconductor,~~
input and output electrodes are further formed on said semiconductor layer, ~~and~~
~~a filter characteristic is provided.~~

24. (Previously Presented) The semiconductor device according to claim 16,
further comprising a buffer layer, between said substrate and said semiconductor
layer,

wherein said buffer layer contains a material having a composition or a structure
identical to that of said semiconductor layer as a base and slightly doped or undoped with
impurities.

25. (Canceled)

26. (Currently Amended) The semiconductor device as claimed in claim ~~[[25]]~~ 24,
wherein said buffer layer ~~[[is]]~~ comprises ZnO.

27. (Previously Presented) The semiconductor device according to Claim 16,
further comprising an insulating layer formed by using a material identical to that for
said substrate for a basic structure.

28. (Currently Amended) The semiconductor device according to claim 16,
further comprising a light emission layer formed on said semiconductor layer by
using a material having a composition or a structure identical to that of said semiconductor
layer as a base, and

a second semiconductor layer which is formed on said light emission layer by using a
material having a composition or a structure identical to that of said semiconductor layer as a
base, and which has a different ~~channel~~ conductive sign from that of said semiconductor
layer.

29. (Previously Presented) The semiconductor device according to claim 28,
wherein said light emission layer is selected from the group consisting of a multilayer
structure of (Mg, Zn)O and ZnO, a multilayer structure of (Zn, Cd)O and ZnO, and a
multilayer structure of (Mg, Zn)O and (Zn, Cd)O.

30. (Currently Amended) The semiconductor device according to claim 16,

wherein ~~said semiconductor layer is an insulating semiconductor,~~
input and output electrodes are further formed on said semiconductor layer, ~~and~~
~~a filter characteristic is provided.~~

31. (Currently Amended) A semiconductor device comprising,
a substrate for a basic structure containing

(1) a material of formula LnABO_4 or $\text{LnAO}_3(\text{BO})_n$,

wherein,

Ln is a rare earth element,

A is selected from the group consisting of Fe, Ga and Al,

B is selected from the group consisting of Mn, Co, Fe, Zn, Cu, Mg, and Cd, or

(2) a material of formula ScAlBeO_4 , ScBMgO_4 , ScBBcO_4 , or
 $\text{LnAO}_3(\text{MgO})_n$

wherein,

Ln is a rare earth element,

A is selected from the group consisting of Fe, Ga and Al[[,]]

~~B is Boron;~~ and

a semiconductor layer formed on said substrate,

wherein said semiconductor layer is formed ~~form~~ from a material comprising at least
one of a group II metal oxide or a group III nitrides nitride;

wherein said semiconductor layer is formed on said substrate by depositing said
semiconductor layer at temperatures from 350 °C to 600 °C.

32. (NEW) A method of making a semiconductor device comprising,
providing a substrate for a basic structure containing

(1) a material of formula LnABO_4 or $\text{LnAO}_3(\text{BO})_n$,

wherein,

Ln is a rare earth element,

A is selected from the group consisting of Fe, Ga and Al,

B is selected from the group consisting of Mn, Co, Fe, Zn, Cu, Mg, and Cd, or

(2) a material of formula ScAlBeO_4 , ScBMgO_4 , ScBBcO_4 , or
 $\text{LnAO}_3(\text{MgO})_n$

wherein,

Ln is a rare earth element,

A is selected from the group consisting of Fe, Ga and Al; and
depositing a semiconductor layer formed on said substrate at temperatures from 350 °C to 600 °C,

wherein said semiconductor layer is formed from a material comprising at least one of a group II metal oxide or a group III nitride.

33. (NEW) A method of using a semiconductor device comprising:
providing a substrate structure containing

(1) a material of formula LnABO_4 or $\text{LnAO}_3(\text{BO})_n$,

wherein,

Ln is a rare earth element,

A is selected from the group consisting of Fe, Ga and Al,

B is selected from the group consisting of Mn, Co, Fe, Zn, Cu, Mg, and Cd, or

(2) a material of formula ScAlBeO_4 , ScBMgO_4 , ScBBeO_4 , or
 $\text{LnAO}_3(\text{MgO})_n$

wherein,

Ln is a rare earth element,

A is selected from the group consisting of Fe, Ga and Al; and

providing a semiconductor layer on said substrate,

wherein said semiconductor layer is formed from a material comprising at least one of a group II metal oxide or a group III nitride;

wherein said semiconductor layer is formed on said substrate by depositing said semiconductor layer at temperatures from 350 °C to 600 °C; and
applying a voltage to said semiconductor layer.